

REMARKS:Status

After this response, claims 1 to 29 are pending. Claims 1 to 6, 15, 16, 18, 19, and 20 to 29 have been amended and are the independent claims. Reconsideration and further examination are respectfully requested.

Allowed Claims

The Office Action indicated that claims 2 to 6, 16, 19, 20, 22, 23, 25, 26, 28 and 29 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of their base claims and any intervening claims. Applicants have so amended these claims. Allowance of the claims is respectfully requested.

Section 102 and 103 Rejections

Claims 1, 7 to 14, 24 and 27 were rejected under 35 U.S.C. § 102(a) over “File System Design for an NFS File Server Appliance” (Hitz). Claims 15, 17, 18 and 21 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,604,900 (Iwamoto) in view of Hitz. Of the rejected claims, 1, 15, 18, 21, 24 and 27 are independent.

Claims 1 and 7 to 14: The independent one of these claims is reproduced below as amended:

1. A method of operating a filesystem, said filesystem including a live filesystem accessible to users and a zombie filesystem not accessible to users, said method including

moving at least some blocks of a file from said live filesystem to said zombie filesystem; and
recording changes to said zombie filesystem in a persistent memory.

The applied references do not teach the features of this claim, at least with respect to the “zombie filesystem not accessible to users” to which “at least some blocks of a file” can be moved “from said live filesystem.”

In more detail, the Office Action apparently equated Hitz’s snapshot, metadata and/or inodes with the claimed zombie filesystem. However, each of these elements is clearly different from the claimed zombie filesystem.

Hitz’s snapshot is accessible to users. In fact, page 6, section 2.1, is actually entitled “User Access to Snapshots.” Hitz does mention that the “.snapshot directories are ‘hidden’”; however, hidden files are entirely different from inaccessible files.

Hitz’s also discusses meta-data including inodes. However, these elements are not the type of elements to which blocks can be moved from a live filesystem. Rather, these elements contain data used to point to data blocks for files in the file system. (Applicants note that in some known implementations of WAFL, inodes for small files can include the actual data for those files. However, in those cases, the data in that inode clearly is accessible to the user, and thus those inodes are not equivalent to the claimed zombie filesystem.)

The Office Action acknowledged that Iwamoto does not teach a zombie filesystem. Without a teaching of a zombie filesystem, neither Hitz nor Iwamoto can teach “moving at least some blocks of a file from said live filesystem to said zombie filesystem.”

In view of the foregoing, allowance is respectfully requested of claim 1 and its dependent claims.

Claims 15 and 17: The independent one of these claims is reproduced below as amended:

15. A method of operating a filesystem, said filesystem including a live filesystem accessible to users and a zombie filesystem not accessible to users, said method including

 moving at least some blocks of a file from said live filesystem to said zombie filesystem; and
 dynamically growing said zombie filesystem.

This claim also recites a “zombie filesystem not accessible to users” to which “at least some blocks of a file” can be moved “from said live filesystem.” As discussed above with respect to claim 1, the applied art does not teach such. Accordingly, allowance is also respectfully requested of claim 15 and its dependent claim.

Claim 18: This claim is reproduced below as amended:

18. A method of operating a filesystem, said filesystem including a live filesystem accessible to users and a zombie filesystem not accessible to users, said method including

 transfer of a file from said live filesystem to said zombie filesystem before breakage of links to blocks in said file, in response to an operation on said file, said operation using said zombie filesystem.

Substantially as discussed above with respect to claim 1, none of Hitz’s snapshot, metadata and/or inodes are equivalent to the claimed zombie filesystem. (Applicants note that claim

18 recites transfer of a file instead of moving at least some blocks of a file; however, the same arguments still apply.) As noted in the Office Action, Iwamoto also does not teach a zombie filesystem. Accordingly, this claim also is believed to be allowable, and such action is respectfully requested.

Claim 21: This claim is reproduced below as amended:

21. (Currently Amended) A method of operating a filesystem, said filesystem including a live filesystem accessible to users and a zombie filesystem not accessible to users, said method including
transfer of a file from said live filesystem to said zombie filesystem before performing any substantial portion of an operation on said file, said operation using said zombie filesystem.

Substantially as discussed above with respect to claim 1, none of Hitz's snapshot, metadata and/or inodes are equivalent to the claimed zombie filesystem. (Applicant notes that claim 21 recites transfer of a file instead of moving at least some blocks of a file; however, the same arguments still apply.) As noted in the Office Action, Iwamoto also does not teach a zombie filesystem. Accordingly, this claim also is believed to be allowable, and such action is respectfully requested.

Claim 24: This claim is reproduced below as amended:

24. A method of operating a filesystem, said filesystem including a live filesystem accessible to users and a zombie filesystem not accessible to users, said method including
moving at least some blocks of a file from said live filesystem to said zombie filesystem; and
replay of an operation on said file, said operation using said zombie filesystem.

This claim also recites a “zombie filesystem not accessible to users” to which “at least some blocks of a file” can be moved “from said live filesystem.” As discussed above with respect to claim 1, the applied art does not teach such. Accordingly, allowance is also respectfully requested of claim 24.

Claim 27: This claim is reproduced below as amended:

27. A method of operating a filesystem, said filesystem including a live filesystem accessible to users and a zombie filesystem not accessible to users, said method including

 moving at least some blocks of a file from said live filesystem to said zombie filesystem; and

 replay of a set of filesystem operations, said operations including at least some operations using said live filesystem and at least some operations using said zombie filesystem.

This claim also recites a “zombie filesystem not accessible to users” to which “at least some blocks of a file” can be moved “from said live filesystem.” As discussed above with respect to claim 1, the applied art does not teach such. Accordingly, allowance is also respectfully requested of claim 27.

No Admission

Applicants’ decision not to argue each of the dependent claims separately is not an admission that the subject matter of those claims is taught by the applied art.

Closing

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney can be reached at (614) 205-3241. All correspondence should continue to be directed to the address indicated below.

Respectfully submitted,



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